

Chapter 1

Accelerating Cleanup

EPA revitalized Superfund during FY92, achieving clean-up goals while implementing far-reaching reforms for future cleanups. Fulfilling the commitment to accelerate the pace of cleanup, Agency efforts focused on

- Completing clean-up activities to more than double the number of sites categorized as construction completions;
- Refining the clean-up process by introducing a simplified paradigm, the Superfund Accelerated Clean-Up Model (SACM), for future cleanups; and
- Streamlining clean-up activities such as remedy planning, selection, and design and eliminating significant sources of delay.

1.1 ACHIEVING CLEANUPS

Aggressively pursuing the cleanup of Superfund sites, the Agency completed clean-up activities to place a record 88 additional National Priorities List (NPL) sites in the construction completion category during FY92. As shown in Exhibit 1.1-1, fiscal year progress brought the total number of NPL sites classified as construction completions to 149, exceeding the 1991 30-Day Study Task Force recommendation of 130 sites by the end of FY92. The FY92 program total of 149 sites represents an increase of 144 percent over the FY91 program total of 61 sites. The significant rise in completions during FY92 reflects the increasing emphasis on completing construction at sites and the streamlining of documentation requirements.

Construction Completions

To better communicate Superfund progress, the Agency defined construction completion and established the construction completion category. A site is considered a construction completion site when

- All necessary physical construction of clean-up remedies is complete;
- EPA has determined that the response action should be limited to measures that do not involve construction; or
- The site qualifies for deletion or has been deleted from the NPL.

Before reaching construction completion status, a site has undergone substantial response efforts:

- The site has been assessed (preliminary assessment (PA) and site inspection (SI)) and determined to warrant placement on the NPL. If any immediate threat to human health or the environment was identified at the site, a Superfund removal action may have been taken to address the threat.
- After placement of the site on the NPL, the Agency has conducted a remedial investigation/feasibility study (RI/FS) to further examine the nature and extent of contamination and to evaluate clean-up alternatives.
- EPA has selected a remedy for the site and has signed a record of decision (ROD) to document its selection of the remedy.
- For a site where construction of the remedy is required, EPA has completed a remedial design

ARAR	Applicable or Relevant and Appropriate Requirement
ARCS	Alternative Remedial Contracting Strategy
CD	Consent Decree
CWA	Clean Water Act
DOJ	Department of Justice
ESI	Expanded Site Inspection
FS	Feasibility Study
HRS	Hazard Ranking System
NPL	National Priorities List
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
PRP	Potentially Responsible Party
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SACM	Superfund Revitalization
SI	Site Inspection
SRO	Superfund Accelerated Clean-Up Model
USACE	United States Army Corps of Engineers

(RD) to develop plans for the construction of the selected remedy.

- To construct the remedy, EPA has undertaken and completed a remedial action (RA) at the site.

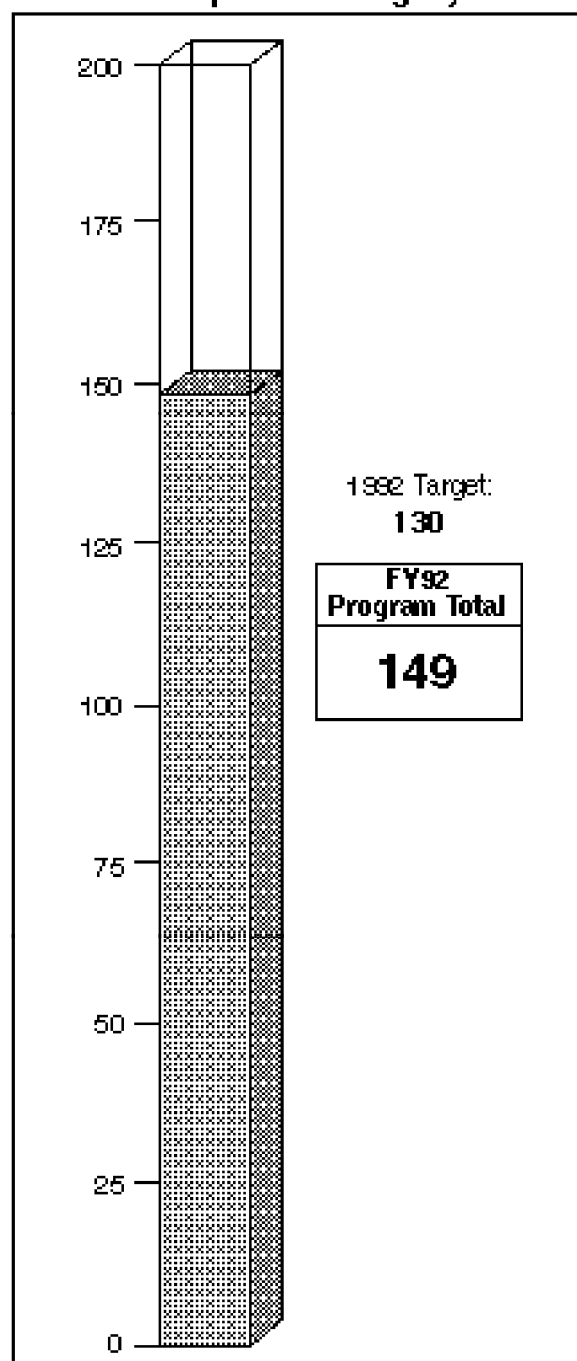
At sites where a variety of remedies are required, discrete site areas or “operable units” are defined. A site is classified as a construction completion site only when construction completion criteria have been met at all operable units of the site and a preliminary close-out has been conducted to ensure that any construction is consistent with the ROD and RD. Operation of a constructed remedy will continue until performance standards are met and desired clean-up levels are achieved.

30-Day Study Recommendations

Because of efforts during the fiscal year, the Agency surpassed the number of FY92 construction completions recommended by the 30-Day Study Task Force. These fiscal year efforts also established an infrastructure to achieve recommendations for future years.

Implementing 30-Day Study Task Force recommendations, EPA Headquarters worked with each Region to identify sites that were candidates for construction completion status for FY92 and FY93.

**Exhibit 1.1-1
Superfund Sites in the Construction
Completion Category**



Source: Office of Emergency and Remedial Response/Office of Program Management and Hazardous Site Control Division.

To achieve the national target, the Agency allowed one Region to fall short of its expected portion only if another Region could accomplish the additional construction completions needed. A workgroup reinforced the priority of achieving construction completion. Regional experts, Headquarters Office of Research and Development staff, and the Environmental Response Team provided technical assistance to the Regions to support construction completion efforts. The Agency monitored progress through a tracking system and quarterly conference calls between Regions and Headquarters. To provide the required resources, the Agency developed strategies allocating additional personnel in the Regions to direct clean-up activities and ensuring sufficient funding for future years.

1.2 SUPERFUND ACCELERATED CLEAN-UP MODEL

To accelerate the pace of future cleanup, the EPA Administrator endorsed SACM as the new model for clean-up action in the Superfund program. Implementing SACM will streamline and accelerate the clean-up process, better direct finite resources toward site clean-up activities rather than site study, and more clearly identify and communicate environmental results.

Exhibit 1.2-1 illustrates the SACM process. Under SACM, the Agency will screen and assess sites under a single, continuous site assessment process. During this assessment process, a Regional decision team will recommend short-term, “early actions” to address threats to the health and safety of the surrounding population and environment. The team will assess whether and when “long-term actions” for environmental remediation, such as ground-water restoration, are appropriate. Enforcement activities, community relations, and state involvement will occur throughout the process.

SACM will introduce significant improvements in the existing clean-up process:

- Combining site assessment activities, SACM will eliminate sequential and often duplicative studies.

- SACM will eliminate the existing overlap between the types of clean-up actions executed under the Superfund removal program and those executed under the Superfund remedial program. By redefining and distinguishing Superfund clean-up actions as early actions and long-term actions, SACM will allow each action distinct applications.

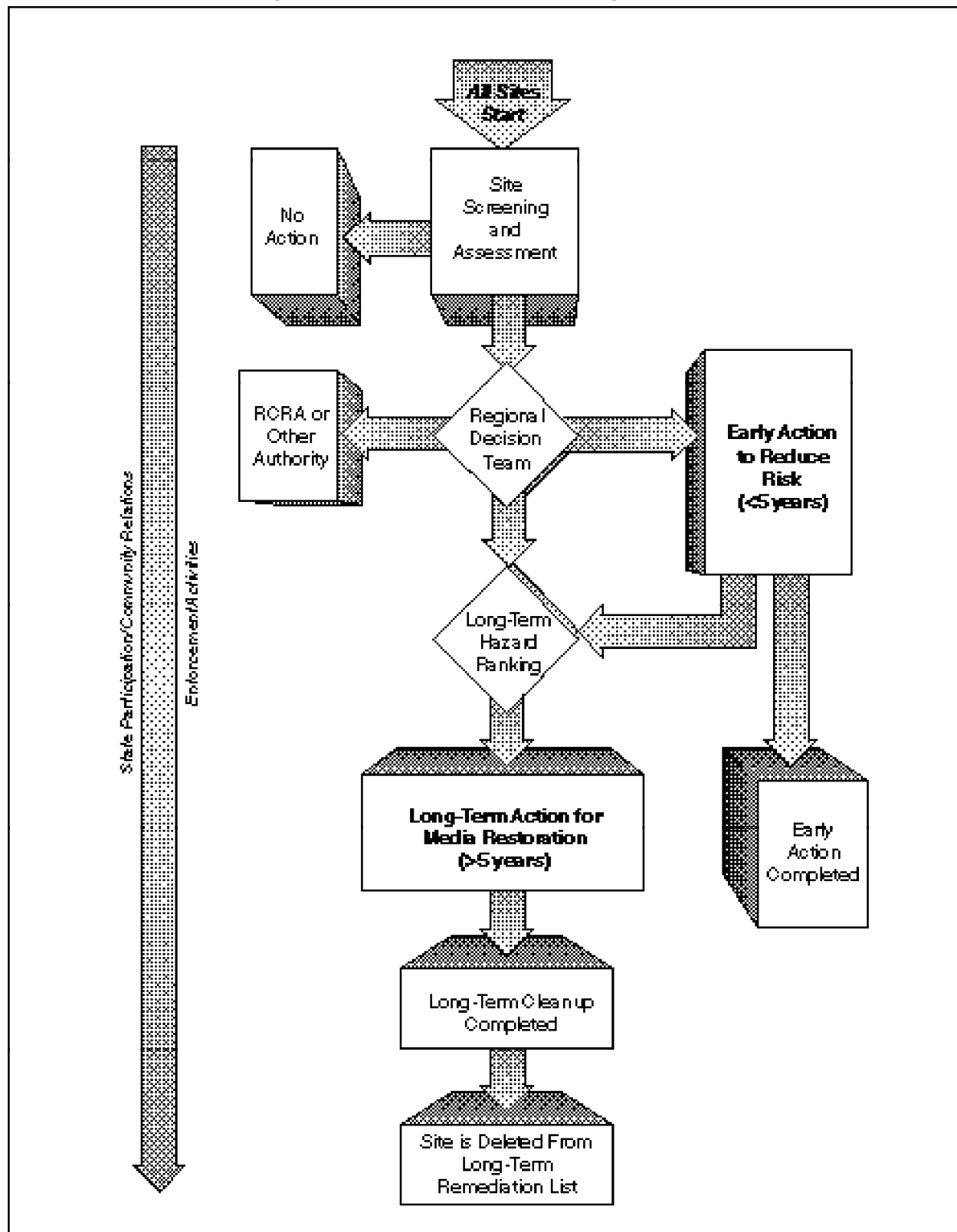
1.2.1 Single, Continuous Site Assessment

SACM will combine the various studies conducted under the existing clean-up process, thereby saving time and money. Under the existing process, sites might be assessed separately under the Superfund site assessment, removal, and remedial programs; under the Resource Conservation and Recovery Act (RCRA) program; by the Agency for Toxic Substances and Disease Registry; by states; by localities; and by private parties. The Agency found that personnel performing these assessments often did not consider the information gathered in other studies because of perceived differences in data needs and time lags during which data from previous assessments became obsolete.

The single, continuous site assessment under SACM will consolidate the elements of existing studies, providing timely, multiple-use data:

- The existing two-stage site assessment screening process will become a single screening function that will be conducted as sites are discovered. The single screening function will combine the PA, which consists of research into existing information to identify whether a potential threat exists, and the SI, which consists of sufficient sampling to assess a potential threat.
- Following the initial screening, remedial investigation (RI)-level data will be collected for sites where a potential threat exists. RI-level data provides information on the type and extent of contamination to determine the risks posed and the clean-up action required. The RI-level data will provide the information to evaluate the need for both early and long-term actions.

**Exhibit 1.2-1
Superfund Accelerated Clean-Up Model**



Source: Office of Solid Waste and Emergency Response.

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In addition, by initiating early involvement of states, potentially responsible parties (PRPs), communities, and other parties in the process, SACM will limit the need for multiple assessments by these parties.

Consolidation of assessment steps can save years in the clean-up process by more quickly eliminating the uncertainties surrounding a site. Rigid quality assurance/quality control procedures will ensure high-quality data that can be used to support multiple assessment needs.

1.2.2 Regional Decision Teams

Under SACM, Regional decision teams will be created to determine appropriate response actions for Superfund sites. The teams will recommend early actions to address threats to human health and safety and determine whether a site will be included on the Long-Term Remediation List. The teams may decide that federal action is inappropriate; in this case, the site may be deferred to other response authorities, such as state authority under RCRA.

Capitalizing on the expertise in the Regions, the Regional decision teams will generally consist of experienced managers of both Fund-lead and enforcement-lead sites, site and risk assessors, On-Scene Coordinators, Remedial Project Managers (RPMs), Community Relations Coordinators, Regional Counsel staff, and state officials. Implementation of the 30-Day Study Task Force recommendations and other Agency efforts to develop accepted standards for remediation levels and technologies will provide decision-making tools that can be used by the teams.

1.2.3 Early Actions to Reduce Immediate Risks

SACM will facilitate rapid risk reduction at Superfund sites. The Agency will address all immediate threats to human health and the environment through early actions. Examples of early actions include

- Removing soil and waste;
- Preventing access to contaminated areas;
- Capping landfills;
- Relocating people; or
- Providing alternative drinking water sources.

Early actions will expand the use of existing removal authority to expedite responses to immediate threats, especially at NPL sites. Most commonly, immediate threats at NPL sites are associated with the possibility or risk of direct contact with waste or contaminated soil, or ingestion of contaminated water. These risks can be reduced rapidly through SACM early actions. Under the existing process, the Agency commonly addresses such risks at NPL sites through remedial authority. CERCLA, however, authorizes the use of removal actions at NPL sites when the removal action is consistent with planned remedial action.

The Agency will use rapid reduction of risk through early actions as a primary measure of Superfund progress and success. To keep the public informed of progress in reducing risks, the Agency will publish an Early Action List in the *Federal Register*. The Agency will place sites on the list when a decision for clean-up action is made and will remove the site from the list when clean-up action is completed. Early actions generally will take no more than three to five years.

1.2.4 Long-Term Actions to Restore the Environment

In some cases, clean-up actions to restore the environment may take many years, sometimes decades. SACM clearly identifies environmental restoration as a long-term action. Examples of long-term actions include

- Ground-water restoration;
- Remediation of mining areas;
- Extended incineration; or
- Wetland/estuary restoration.

The Agency will determine the need for long-term actions through the SACM site assessment process. The Agency will publish a list of sites requiring long-term actions in the *Federal Register* on the Long-Term Remediation List. In most cases, any immediate threats to human health and the environment at sites on this list will have already been addressed through early actions.

1.2.5 Implementation

During the fiscal year, the Agency developed and began carrying out an implementation plan for SACM. Projects aimed at piloting the SACM process were also initiated.

The Superfund Accelerated Clean-Up Model Implementation Plan

In April 1992, senior managers from the Office of Solid Waste and Emergency Response (OSWER), the Office of General Counsel, the Office of Enforcement, and the Regional offices participated in a SACM planning session to develop a draft implementation strategy. The session focused on three areas:

- Consolidating existing assessment processes;
- Clarifying the distinction between early action and long-term action; and
- Identifying necessary program management and contracting changes.

The goal of the session was to develop a well-defined framework for SACM implementation. Discussion groups identified and prioritized more than 100 interrelated issues to be addressed. The groups developed an implementation plan that set out a timetable, identified activities, and assigned responsibilities for dealing with these issues. During FY92, the Agency began many of the activities in the implementation plan:

- Establishing Regional decision teams;
- Developing short sheets and fact sheets to provide information on the new clean-up model;
- Modifying relevant guidance; and

- Examining possible statutory changes that might be required to facilitate full implementation of SACM, such as streamlining the process required to waive removal funding and duration limits.

Soliciting additional Regional input on SACM implementation, the Agency held a national meeting in August 1992 of more than 300 EPA Superfund officials and held follow-up meetings throughout the year with each Region. Members of the newly formed Superfund Revitalization Office (SRO), led by the National Superfund Director, coordinated these meetings. (The National Superfund Director and SRO, which was created by the Administrator to improve management and accountability in the Superfund program, oversaw major Agency initiatives throughout the year. See Chapter 2.)

In addition to obtaining Regional perspectives, EPA sought input on SACM from other federal agencies, states, communities, and PRPs and began examining the roles of these parties in the SACM process.

Regional Pilots

The Regions initiated SACM pilots through an OSWER Regional pilot incentive program aimed at identifying ways to improve the Superfund process. Using a variety of approaches, the SACM pilots will explore developing a single site assessment function, employing a team approach to decision making, and conducting early actions.

Region 1 will use the time prior to beginning an RI/FS to better define the scope of the investigation to be conducted in the RI/FS. The Region will identify ways to make the RI/FS work plan more specific, aim investigations on the most promising remedial alternatives, and identify opportunities for early actions. Also, at 10 NPL sites, the Region will use decision teams to direct appropriate response actions.

Regions 2 and 8 will combine the existing processes for the expanded SI (ESI) and RI/FS into a single site assessment function. An Alternative Remedial Contracting Strategy (ARCS) contractor will perform both the ESI and RI/FS activities, and the Hazard Ranking System (HRS) scoring package will be prepared simultaneously. Candidate sites for

the pilots are high-priority Fund-lead sites that are likely to score over 28.50 on the HRS, the current criterion for listing on the NPL. Beginning the RI/FS before a site is listed on the NPL may accelerate cleanup by 22 months or more.

Region 3 will evaluate using removal actions rather than remedial actions for time and cost savings at complex NPL sites. The early actions will include short-term activities, such as excavation or source control. Region 3 will also form an interdisciplinary team to develop and implement an approach for evaluating NPL sites where removal and remedial actions could be integrated.

Using decision teams, Regions 5 and 9 will streamline site screening and assessment activities by defining the information needed in an initial site investigation to satisfy the requirements for the standard remedial, removal, and site assessment investigations. Region 9 will pilot the resulting site investigation design at 30 sites.

Through continued innovations in its "Lightning ROD" pilots, Region 6 will seek to shorten the overall Superfund process for both Fund-lead and PRP-lead sites by three years. The Lightning ROD pilot includes planning and funding clean-up activities prior to NPL listing, concurrently executing activities, and technically improving reporting and recordkeeping.

Region 10 will address surface contamination through early actions at three NPL sites. The Region will conduct an early action involving excavation and disposal to address well-characterized metal contamination of the soil at the Yakima Plating site. At two other sites with surface contamination but no ground-water contamination, the Region will expedite cleanups through early actions by conducting removal actions following the completion of the RI and risk assessment.

1.3 OTHER EFFORTS TO ACCELERATE THE PACE OF CLEANUP

In addition to introducing SACM, the Agency implemented recommendations made by the 30-Day

Study Task Force to streamline clean-up activities and eliminate significant sources of delay. The task force suggested that time savings could be achieved by

- Standardizing elements of remedy planning and selection, thus narrowing the number of possible remedial alternatives and the time required to evaluate alternatives;
- Abbreviating the design phase at sites where the extent of necessary action cannot be readily determined;
- Facilitating the resolution of site-specific issues that cause delays in the clean-up process; and
- Accelerating PRP cleanups.

1.3.1 Standardizing Remedy Planning and Selection

To accelerate the pace of cleanups and improve consistency in remedy selection across the Regions, the 30-Day Study Task Force advocated standardizing remedy planning and selection. During FY92, the Agency began developing three approaches recommended in the study, including presumptive remedies, technology-based standards, and soil-trigger levels. Several Regions initiated pilots to further explore possible approaches for streamlining clean-up activities.

Presumptive Remedies

By associating a certain type of site with the types of clean-up remedies historically selected, the Agency will identify a site's presumptive remedies. The Agency will identify two or three viable presumptive remedies for each type of site, thereby limiting the number of remedial alternatives that must be considered while also providing decision makers with the flexibility to consider site-specific information. Use of presumptive remedies will cut time from the feasibility study (FS), in which the Agency evaluates remedial alternatives, and from the RD, in which the Agency develops the plan for constructing and implementing the technology proposed for cleanup.

During FY92, the Agency worked to develop presumptive remedies for four types of sites: municipal landfill, wood-treating, polluted ground-water, and solvent-contaminated sites. For each type of site, EPA formed a workgroup, consisting of Regional and Headquarters officials, to analyze historical information. Based on the workgroups' findings, the Agency will issue guidance on the presumptive remedies for each of the four types of sites. The Agency will also issue an overview "shortsheet" to address technical, legal, and policy issues that might arise in implementing presumptive remedies.

Technology-Based Standards

During FY92, the Agency formed a workgroup to evaluate the feasibility of establishing technology-based remedies for some types of sites. The Agency will link technologies to clean-up objectives, media, and pollutants to develop an index of the best available technologies for dealing with various site characteristics.

Soil-Trigger Levels

Because few federal or state soil clean-up levels for specific pollutants have been developed, the extent of cleanup for soil has traditionally been determined on a site-by-site basis. To facilitate the determination of soil clean-up levels, the Agency began developing soil trigger levels. A trigger level reflects a chemical concentration below which EPA would consider the chemical not to be of concern, and above which EPA would consider further study appropriate. Under certain conditions, the trigger level might also serve as the clean-up level.

During FY92, the Agency began developing soil trigger levels for the 30 top-priority chemicals found at Superfund sites. The Agency directed its focus toward trigger levels for chemicals that pose direct contact threats, particularly contaminants that could be ingested or inhaled. The Agency will also develop trigger levels for soil in cases where contamination may pose a threat to ground water.

Regional Pilots

The Regions will provide input on standardizing remedy planning and selection through projects conducted under the OSWER Regional pilot incentive program. Region 3 will review all of its municipal landfill sites to evaluate whether capping is appropriate as a standard remedy. Region 6 will draw on historical experience with similar sites to conduct focused FSs. Region 7 will develop standard clean-up goals, remedy types, and ROD and statement-of-work language for grain storage sites, polychlorinated biphenyl-contaminated sites, and coal gasification sites.

Region 9 will use plug-in RODs, modifying existing RODs used in similar circumstances, to accelerate the cleanup of the Indian Bend Wash site near Phoenix, Arizona. The northern and southern sections of the Indian Bend Wash site have similar contamination and geology. The Region will modify the RODs developed to address contamination at the northern sections in creating new RODs to address contamination at the southern sections. Using a plug-in ROD eliminates the need for a separate FS and ROD at each portion of the site, allowing cleanup to progress from the RI directly to the RD and resulting in potential time and resource savings.

1.3.2 Shortening the Remedial Design Phase

EPA explored options for shortening the design phase of cleanup to allow the construction of the selected remedy to begin earlier in the process. The 30-Day Study Task Force recommended this approach for sites where the time spent in designing the response action is of limited benefit in determining the extent of action required. The task force suggested that this approach might be appropriate at sites where large-scale excavations are necessary, where specific contamination boundaries cannot be readily defined, or where abandoned industrial facilities must be dismantled and decontaminated. In FY92, a

workgroup consisting of representatives from Headquarters, Regional offices, and the United States Army Corps of Engineers (USACE) convened to develop criteria for shortened RDs and to identify appropriate projects for pilot studies.

To facilitate the RD and construction of the remedy, the 30-Day Study Task Force recommended increasing the flexibility within the scope of work for contracts that are used to support these activities at Fund-lead sites. These contracts include the Emergency Response Clean-Up Service contracts, the ARCS contracts, and USACE pre-placed construction contracts. During the fiscal year, the Agency issued *Use of Time and Materials and Cost Reimbursement Subcontracts for Remedial Actions under the Alternative Remedial Contracting Strategy Contracts*, a directive on the expansion of the scope of work for ARCS contracts.

1.3.3 Resolving Issues that Cause Delays

The 30-Day Study Task Force found that unresolved site-specific issues between government entities could cause significant delay in remedy selections, PRP settlements, RDs, and RAs. During FY92, EPA undertook actions to identify and address the common causes of these site-specific issues and to work toward their resolution.

Managers from EPA, the Department of Justice (DOJ), and various states met to develop strategies to resolve site-specific issues. The strategies emphasize early and routine elevation of issues to senior management and management supervision of the issue resolution process. In a May 1992 memorandum, EPA provided guidance to the Regions to better address issues at sites where contamination crosses Regional or national boundaries, where technical or policy issues could set a national precedent, where conditions require national-level coordination with other federal agencies, or where there is a high level of public interest. The memorandum directed the Regions to elevate such issues and the National Superfund Director to oversee the issue resolution.

The National Superfund Director and the Regions developed and began implementing an action plan to improve EPA/DOJ interagency coordination in Superfund enforcement. Representatives of EPA and DOJ held weekly meetings to discuss ways to expedite the enforcement process, including methods that had proven successful in the past. To eliminate duplication between EPA and DOJ paperwork, the Agency recommended that EPA documents be included in the consent decree (CD), which outlines the terms of the agreement between EPA and PRPs for site cleanup. The Agency also proposed a rule clarifying EPA procedures for recovering clean-up costs from PRPs.

The Agency solicited information from the Regions and states on the common causes of EPA/state site-specific issues. Under the resulting action plan, the Agency will investigate potential conflicts with states regarding state applicable or relevant and appropriate requirements (ARARs), approaches to ARAR dispute resolution, the effect of presumptive remedies on state participation in clean-up decisions, and improvements in communicating information about EPA removal actions. To reduce the financial burden of cleanup for states, the Agency will consider allowing states to pay their statutorily required 10 percent cost share in phases or with in-kind services. The Agency will also streamline the Superfund guidance on memoranda of agreement that describe how EPA and a given state will cooperate on Superfund cleanups.

1.3.4 Accelerating the Pace of PRP Cleanups

During FY92, the Agency modified policies to eliminate significant sources of delay in PRP cleanups, as identified in the 30-Day Study. EPA issued a directive in November 1991 limiting mid-stream takeovers to eliminate delays caused by changes in lead responsibility from EPA to PRPs within a discrete phase of cleanup. In April 1992, the Agency issued a policy directing the Regions to

encourage PRPs to initiate RD work after EPA and PRPs have signed the CD rather than after DOJ has lodged the CD in court and the court has entered the CD. Initiating work at this point would eliminate the time lost between the signing of the CD and the entering of the CD in the court, which can be as long as two years.

Through the OSWER Regional pilot incentive program, the Regions pursued a variety of projects to encourage early PRP involvement in clean-up activities and accelerate the pace of PRP-lead cleanups. Several Regions piloted the use of early *de minimis* settlements for reaching clean-up agreements with parties whose contribution to the contamination at a site was relatively minor. At the Tonolli site, Region 3 developed an early waste-in list to identify candidate *de minimis* parties. This list was used to negotiate a proactive settlement with 170 *de minimis* parties at the site. By reaching early settlements with *de minimis* parties, EPA will be able to manage negotiations with the remaining PRPs more efficiently.

To achieve site cleanup more quickly at the Aquatech site, Region 4 negotiated *de minimis* settlements while conducting removal activities. Region 9 will accelerate the RD and RA at the Operating Industries, Inc., site by pressing for an early settlement with the 3,500 *de minimis* PRPs. Successful settlement with the *de minimis* parties at the Operating Industries, Inc., site would set precedents for *de minimis* settlement size and monetary value.

Region 1 began a project to identify effective financial inducements for encouraging PRPs to accelerate the pace of cleanups. At selected pilot sites, the Region will restructure the statement of work that accompanies CDs to include incentives such as discounts on oversight costs and other financial benefits for completing cleanup ahead of schedule.

Region 3 sought ways to accelerate the pace of PRP cleanups by improving resolution of EPA/DOJ issues. Through discussions with DOJ, the Region eliminated the statement of work as an attachment to the CD and, instead, addressed specific performance goals in the ROD. Deleting the statement of work from the CD eliminates ambiguities that could arise when the ROD and CD descriptions of the selected remedy differ. By including the specific performance goals in the ROD, ROD quality is improved, and legal approval can be accelerated.

Region 4 piloted a voluntary cleanup, whereby EPA will give official approval to PRPs who voluntarily undertake clean-up action prior to a site's placement on the NPL. In the Region 4 pilot, PRPs will conduct a voluntary cleanup with EPA oversight under an administrative order on consent. Implementing the concepts of SACM site assessment, PRPs in the Region 4 pilot will conduct ESI and RI/FS activities simultaneously with NPL listing activities.

Region 8 will expedite cleanup at the Annie Creek site in South Dakota through a multi-authority enforcement pilot. The Region will use both Superfund and Clean Water Act (CWA) authority to accomplish site cleanup. By combining the tools of both statutes, it is estimated that remediation will be accelerated by at least six months. Both Superfund and CWA personnel will monitor clean-up progress.

Region 10 will examine methods for more effective and efficient PRP searches. The Region will define a step-by-step process for searching for PRPs and will clarify the responsibilities of search team members, including civil investigators, cost recovery specialists, RPMs, and attorneys with the Office of Regional Counsel. The pilot will seek to streamline the PRP search process by reducing the time required to identify PRPs and reach settlements. The Region will provide the resulting recommendations to Headquarters and other Regions.